



North Carolina Department of Environment and Natural Resources

Division of Air Quality

B. Keith Overcash, P.E.

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Secretary

February 5, 2010

Docket ID No. EPA-HQ-OAR-2007-0352

Environmental Protection Agency

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Washington, DC 20460

Subject: **Docket ID No. EPA-HQ-OAR-2007-0352**
Comments on EPA's proposed rule, "Primary National Ambient Air Quality
Standard for Sulfur Dioxide," *Federal Register* 40 CFR Parts 50, 53, and 58

Dear Ladies and Gentlemen:

Thank you for the opportunity to comment on the Environmental Protection Agency's (EPA) proposed rule, "Primary National Ambient Air Quality Standard for Sulfur Dioxide," published in the Federal Register (FR) on December 8, 2009. On behalf of the North Carolina Division of Air Quality (NCDAQ), I would like to offer the following comments. Let me begin by saying that the NCDAQ believes the Administrator should establish standards for sulfur dioxide (SO₂) that protect the public health with an adequate margin of safety as prescribed in the Clean Air Act.

Like many state air control agencies, NCDAQ is in poor financial condition due to the current economic situation. The cost of deploying a SO₂ monitoring network as proposed is approximately \$1.1 million with an annual operating cost of \$225,000 for North Carolina. In addition to expected costs associated with the proposed SO₂ monitoring network, the NCDAQ also has to determine how to fund the additional monitoring requirements proposed in the ozone monitoring rule and the monitoring that will be required for the new lead and nitrogen dioxide standards. Furthermore, the NCDAQ is expending resources to implement and enforce the generally available control technology (GACT) regulations, not to mention the expected resources that will be needed for the climate change regulations that are on the horizon. The various new requirements and shrinking funds are placing the NCDAQ in a position where we will not be able to afford to implement all of the new monitoring requirements for the various pollutants.

Therefore, EPA needs to fully fund the cost of implementing the SO₂ monitoring requirements. These funds need to be in the form of Section 103 grant monies rather than Section 105 grant monies. If the monitoring is funded with the Section 105 grant, many states may not be able to meet the matching funds requirements for Section 105 grant monies.

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I offer more detailed comments below on the proposed changes to the NAAQS for Sulfur Dioxide.

(FR/Vol. 74, No. 234/Tuesday, December 8, 2009/Proposed Rules 64847) “EPA has decided to propose a new automated SO₂ FRM based on the UVF measurement technology. EPA is confident that commercially available UVF instrument models would provide capability to serve not only current monitoring and FRM applications but anticipated monitoring and FRM needs well into future years. EPA solicits comment on the proposal to promulgate an FRM for SO₂ that would be an automated method based on ultraviolet fluorescence, which would be specified in the form of a reference measurement principle and calibration procedure, as stated here, and contained in a new Appendix A-1 to 40 CFR Part 50.”

NCDAQ’s Comment:

NCDAQ agrees with EPA’s proposal to establish a new automated SO₂ FRM based on the UVF measurement technology as long as the decision to establish a new method does not cause the NCDAQ to have to purchase new equipment earlier than we had planned. Currently, the NCDAQ operates Thermo 43C and 43 TLE instrumentation. These instruments will be supported by Thermo until 2015. The NCDAQ believes we will be able to keep these instruments operational for additional years past 2015. Thus, we request that the EPA maintain the current reference method for at least an additional 10 years.

(FR/Vol. 74, No. 234/Tuesday, December 8, 2009/Proposed Rules 64851) “EPA is proposing that the two prongs of this SO₂ network design would be distributed based on: (1) A Population Weighted Emissions Index (PWEI) and (2) the state-level contribution to the national, SO₂ emissions inventory.”

NCDAQ’s Comment:

NCDAQ is concerned that the two pronged approach in the proposed regulation will lead to duplicative monitoring in some areas and require monitors in areas where monitors are not needed. EPA recognizes the potential for duplicative monitoring, but the proposal does not permit the removal of duplicative monitors. NCDAQ urges EPA to allow for the removal of redundant monitors. In addition, EPA should allow for removal of a monitor in the following situations: (1) where there is only one monitor for a given source or Core Based Statistical Area (CBSA) and data show that the concentrations in the area are less than 75 percent of the National Ambient Air Quality Standards (NAAQS); or (2) where there is more than one monitor in a given CBSA or for a given source and data show that concentrations are less than 80 percent of the NAAQS. Furthermore, in some instances, the PWEI does not appear to be well-correlated with ambient SO₂ concentrations. In order to reduce the number of potential monitors in areas where ambient levels are low, EPA should limit the total number of monitors required in CBSAs based on additional metrics, such as total number of monitors, historical data, area, trends analysis and/or modeling, and allow for removal of monitors as described earlier.

For source oriented monitors, placement at the point of 1-hour maximum concentration must be realistic and flexible. EPA must allow agencies to determine the most scientifically defensible location, while taking into account potential exposures and access to locations with

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adequate siting. NCDAQ encourages a process where Regions work with air monitoring agencies to meet this goal.

(FR/Vol. 74, No. 234/Tuesday, December 8, 2009/Proposed Rules 64851)” We solicit comment on whether the estimated 348 monitors required by this proposal, distributed based on the two network design components presented below, are too few, too many, or suitable to establish a minimum network sufficient to meet the monitoring objectives noted above, including supporting compliance with the proposed 1-hour SO₂ NAAQS.”

NCDAQ’s Comment:

EPA’s proposal requires ambient monitors but appears to site the monitors to target specific facilities. Why not consider an alternative network that would reduce the emissions at the intended facilities without the additional consequences that may result from operating ambient monitors that collect data which leads to nonattainment designations? North Carolina has a state toxics program and the method used to determine compliance with those regulations seems more suitable for an SO₂ standard than EPA’s proposed rule. In essence, a facility whose smokestack SO₂ emissions are above a determined emission rate would be required to perform modeling to demonstrate that the SO₂ concentration at the fence-line does not exceed whatever ambient standard EPA establishes. If modeling does not demonstrate compliance, the facility could then be required to reduce emissions from the stack, install continuous emissions monitoring (CEM) in the stack itself, or require a fence-line monitor at the target facility. This will allow flexibility to work with facilities to determine if monitoring is required and will reduce the cost and consequences of nonattainment. EPA’s proposed SO₂ rule may work, but probably at greater expense and definitely with results that impact activities unrelated to the target facility.

(FR/Vol. 74, No. 234/Tuesday, December 8, 2009/Proposed Rules 64851) “Considering the proposed timeline and criteria presented in the network design, we solicit comment on whether alternative dates would be more appropriate as deadlines for state and local monitoring agencies to submit a monitoring plan. We also solicit comments on whether alternative dates would be more appropriate as deadlines for state and local monitoring agencies to physically deploy monitors.”

NCDAQ’s Comment:

EPA has proposed that the SO₂ network be physically established no later than January 1, 2013. EPA must keep in mind that it is simultaneously revising numerous ambient standards and associated monitoring requirements. EPA seems to view each of these proposals as independent actions; but the state and local agencies must consider the cumulative impact of EPA’s various regulatory actions on their ability to comply. Recent EPA actions will soon require North Carolina to establish new monitors and/or extend the monitoring season for SO₂, NO₂, ozone, and lead. In its formal and informal communications, EPA continues to defer or ignore questions about funding for these new monitoring requirements. Even beyond the capacity to purchase the hardware, EPA has failed to consider whether states have adequate personnel resources to simultaneously startup so many new monitors while also maintaining the existing network. The national recession continues and NCDAQ continues to experience budget cuts, furloughs, and hiring freezes and we do not expect to fully recover anytime soon (if ever). Yet,

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EPA continues to pile on new requirements with no consideration for whether states are being stretched beyond their ability to implement them. EPA must allow states the flexibility to prioritize among the new requirements to get community based monitors in place first and to establish the others as funding and personnel resources allow.

(FR/Vol. 74, No. 234/Tuesday, December 8, 2009/Proposed Rules 64852) “EPA solicits comment on the use of state-level emission inventories based on the most recent NEI to proportionally distribute approximately one third (117 sites) of the required monitoring network.”

NCDAQ’s Comment:

The NCDAQ is concerned about EPA using 2005 emissions inventories to determine the number of population weighted emissions index (PWEI) based and state-wide emissions based monitors. The EPA told states not to put any effort in developing a 2005 emissions inventory for other source categories (area, mobile, etc.) since it would not be used for anything. Now EPA is proposing to establish a monitoring network based on these emissions. If EPA is going to base the ambient monitoring network on emissions, at a minimum the latest stationary source emissions submitted by the states should be used. EPA could use the 2008 CERR emissions inventory which will be submitted by June 2010 and/or the 2009 facility emissions which are required to be submitted in December 2010.

A number of controls have been implemented since 2005 that have reduced SO₂ emissions significantly in North Carolina. Further reductions in SO₂ are expected to occur between now and 2013 as the two largest coal-fire utilities in North Carolina meet the requirements of the North Carolina Clean Smokestacks Act. Some of these reductions will occur through installation of scrubbers, some through fuel switching, and some facilities are planning to shut down. To base the number of monitors a state would be required to install on emission values that do not reflect the current or expected emissions will require an expensive monitoring network to be established that may not be required or necessary to adequately protect public health. To use outdated emissions information to determine the appropriate number of monitors is irresponsible, particularly in this current economic recession.

(FR/Vol. 74, No. 234/Tuesday, December 8, 2009/Proposed Rules 64853) “The EPA solicits comment on (1) the use of state-level emission inventories to proportionally distribute required monitors, (2) requiring each state to have at least one monitor under this prong of the network design, and (3) requiring all monitors to be sited in locations of expected maximum 1-hour concentration inside or outside of CBSAs.”

NCDAQ’s Comment:

Based upon how the monitoring requirements are proposed, in North Carolina every moderate to large source emitting SO₂ will require a down-wind monitor. If it is EPA’s intent to control moderate to large sources that emit SO₂, then it should be done through rulemaking such as the replacement rule for the Clean Air Interstate Rule instead of requiring all of the additional ambient monitoring requirements.

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(FR/Vol. 74, No. 234/Tuesday, December 8, 2009/Proposed Rules 648553) "EPA solicits comment on whether such adjustments to the network should be required on a 5-year cycle that matches the general frequency of network assessments or some other frequency."

NCDAQ's Comment:

With respect to the 5-year cycle for making adjustments to the monitoring network, if the EPA is going to base the monitoring requirements on emission inventories, then it would make sense to make adjustments to the monitoring network on the same cycle that the statewide emissions inventories are updated, i.e., either every 3 years or 6 years to coincide with AERR inventory requirements.

(FR/Vol. 74, No. 234/Tuesday, December 8, 2009/Proposed Rules 64854) "EPA solicits comment on the role of population exposure in the site selection process."

NCDAQ's Comment:

The NCDAQ believes that the monitoring site selection process should be based on where the people are located since the proposed standard is a health-based standard.

(FR/Vol. 74, No. 234/Tuesday, December 8, 2009/Proposed Rules 64854) "We solicit comment on the proposal to allow Regional Administrators the discretion to require monitoring above the requirements under prongs 1 and 2 for any area or location where those monitoring requirements are not sufficient to meet monitoring objectives."

NCDAQ's Comment:

The NCDAQ believes that if the Regional Administrator has the discretion to require additional monitoring above the requirements established under the final rule, it should be done in close consultation with the state agency and appropriate funding should be provided to offset the additional cost.

(FR/Vol. 74, No. 234/Tuesday, December 8, 2009/Proposed Rules 64854) "More specifically, EPA requests comment on whether it should utilize existing screening tools such as AERSCREEN or SCREEN3, which use parameters such as effective stack height and emissions levels to identify facilities with the potential to cause an exceedance of the proposed standard."

NCDAQ's Comment:

The NCDAQ already requires facilities triggering PSD requirements to model for SO₂. The costs for modeling are small compared to the costs for monitoring. In 2008, there were 57 facilities in the state emitting over 100 tons per year of SO₂ and 78 facilities emitting over 50 tons. Rather than screen all 78 facilities, the EPA could develop some sort of population weighting so that facilities located in more populous areas would be screened at a lower threshold. For example, in areas with over a million people, facilities emitting over 100 tons per year would be screened. If the EPA insists on establishing a monitoring network for SO₂ rather than using a rulemaking approach that controls the emissions from the facility, the EPA should consider a network established similarly to the lead network where modeling can be used to demonstrate whether the facility impacts the NAAQS. Facilities where the model indicates the

ambient air is a certain amount below the NAAQS do not have to monitor. This approach would also reward states that have taken actions to reduce SO₂ emissions from their facilities and place the monitoring burden on states that have more significant SO₂ emissions.

(FR/Vol. 74, No. 234/Tuesday, December 8, 2009/Proposed Rules 64855) “EPA solicits comment on the resource implications for state and local agencies associated with this approach.”

NCDAQ’s Comment:

NCDAQ anticipates needing to hire another person to assist with ordering equipment, locating sites, and installing the sites and \$1.1 million dollars in funds to establish the network plus needing two additional monitoring technicians and \$225,000 dollars per year to keep the network operational. NCDAQ has attached a breakdown of how these costs were estimated and discusses these costs below.

NCDAQ estimates the cost for hardware to set up a single site at \$75,000. This includes the cost of a monitor, a calibrator, a zero air generator, data logger, shelter, power and phone installation and all of the other necessary hardware to establish a site. NCDAQ estimates needing an additional \$1.1 million dollars just for equipment to establish a network of 11 additional PWEI and 2 additional STEI monitors.

The initial labor cost for one site is estimated at \$8,928 (248 person hours at \$36.00 per hour, which includes wages, benefits, and overhead). This estimate includes site selection, ordering equipment, equipment check-out, modeling to determine where the sites should go, and shelter and equipment installation. It will take at least one additional electronic technician working halftime and one additional chemist working halftime at a cost of \$80,000 to order all of the equipment and get all of the new sites up and operational.

The estimate for yearly on-going cost of materials and utilities to operate one site is \$4,580. This estimate includes the site lease, phone and power expenses, and repair and maintenance on the monitors. The NCDAQ estimates needing another \$60,000 each year for these ongoing material and utility costs for the network as proposed.

The estimate for yearly on-going labor cost for each site is \$12,816 (356 person hours at \$36.00 per hour, including wages, benefits, and overhead). This estimate includes site maintenance, audits, bi-monthly regional site visits for calibration, data handling for reporting the data to the Air Quality System, and data review. It will require at least one additional fulltime monitoring technician, a halftime data processing assistant, a quarter-time chemist and a quarter time electronic technician to operate this enlarged network at a cost of \$165,000 per year for labor.

(FR/Vol. 74, No. 234/Tuesday, December 8, 2009/Proposed Rules 64855) “We also solicit comment on alternatively requiring state and local agencies to report the maximum 5-minute concentration in an hour based on a moving 5-minute averaging period rather than time block averaging.”

NCDAQ's Comment:

The 5-minute averaging period is so short that the likelihood of missing the highest 5-minute average by using blocks is very small; the only data behavior that can do this is a series of data spikes that last less than 5 minutes and occur less than 5 minutes apart. Thus, the use of 5-minute moving averages is unlikely to result in a higher 5-minute maximum concentration than would be reported using the maximum 5-minute block average. The increased cost of capturing and reporting moving averages would not result in any significant benefit.

(FR/Vol. 74, No. 234/Tuesday, December 8, 2009/Proposed Rules 64855) “Accordingly, we solicit comment on the magnitude and importance of this resource burden, recognizing that monitoring agencies utilize a variety of automated data acquisition and management programs, and that the resulting burden of validating and reporting 5-minute data may vary from a relatively trivial matter to an issue of greater importance, depending on the procedures utilized within each agency’s data reporting process.”

NCDAQ's Comment:

An estimate of time to review and validate the 5-minute data would be 16 hours per month per monitor. Using an estimated cost of \$36 per hour (including wages, benefits, and overhead) the estimated cost per monitor is \$576 per month or \$6,912 per year. Under the proposed monitoring requirements the NCDAQ expects to report 5 minute data for 16 monitors (1 NCore, 11 PWEI, and 4 STEI) resulting in a total monthly cost for NCDAQ of \$9,216 per month or about \$110,000 per year.

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NC DAQ Estimated Costs for the Proposed Sulfur Dioxide Network

<u>Initial Cost for Hardware</u>					
	<u>Item</u>	<u>Number</u>	<u>Cost</u>	<u>Extended cost</u>	
1)	SO2 monitor	16	15,000	240,000	Note: includes 3 spare monitors
2)	Zero Air Pack	13	3,200	41,600	
3)	Calibrator	16	10,000	160,000	Note: includes 3 spare calibrators
4)	Data Logger	13	8,000	104,000	
5)	Site computer	13	750	9,750	Note: 11 new PWEI sites plus 2 new STEI sites
6)	Modem	13	200	2,600	
7)	UPS	13	100	1,300	
8)	Air compressor	13	1,000	13,000	
9)	Shelter 8x10	13	25,000	325,000	
10)	Gas Cylinder	13	350	4,550	
11)	Regulator	13	500	6,500	
12)	Tubing/fittings etc.	13	8,000	104,000	
13)	Power installation	13	1,500	19,500	
14)	Phone Line Install	13	500	6,500	
Total Hardware				1,038,300	
<u>Initial Cost Labor</u>					
	<u>Item</u>	<u>Man hrs.</u>	<u>Rate</u>	<u>Labor \$</u>	
1)	Ordering	80	36	2,880.00	Rate assumes hourly rate of \$24.00/hour x 1.5 multiplier=\$36.00
2)	Equip. Check out	312	36	11,232.00	
3)	Modify shelter	520	36	18,720.00	
4)	Shelter Installation	520	36	18,720.00	
5)	Locating Site	520	36	18,720.00	
6)	Modeling	312	36	11,232.00	
Total Labor Cost		2,264.00		81,504.00	

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NC DAQ Estimated Costs for the Proposed Sulfur Dioxide Network

<u>On-going Cost</u>		<u>per year</u>			<u>per site</u>	
					<u>extended</u>	<u>Network</u>
	<u>Item</u>	<u>Months</u>	<u>units</u>	<u>cost</u>	<u>cost</u>	<u>cost</u>
1)	Site Lease	12	1	100	1,200.00	15,600.00
2)	Power, kwh	12	1400	0.10	1,680.00	21,840.00
3)	Phone	12	1	100	1,200.00	15,600.00
4)	Materials/Supplies		1	500	500.00	6,500.00
Total					4,580.00	59,540.00

Note: average kwh per month, Jamesville

<u>On-going Labor costs</u>		<u>per year</u>			<u>per site</u>	<u>Network</u>
					<u>Labor cost</u>	<u>Labor cost</u>
	<u>Item</u>	<u>Man hrs</u>	<u>Labor Rate</u>	<u>Annual Frequency</u>		
1)	ECB Audits	16	36	1	576.00	7,488.00
2)	ECB Maintenance	8	36	2	576.00	7,488.00
3)	Systems Audit	16	36	1	576.00	7,488.00
4)	QAP updates	8	36	1	288.00	288.00
5)	DMSSB	80	36	1	2,880.00	37,440.00
6)	PPB, misc	40	36	1	1,440.00	18,720.00
7)	<u>Regions</u>					
7a)	14 day visits	6	36	24	5,184.00	67,392.00
7b)	unscheduled visits	6	36	6	1,296.00	16,848.00
Total					12,816.00	163,152.00

(FR/Vol. 74, No. 234/Tuesday, December 8, 2009/Proposed Rules 64855) “We solicit comment on the proposed DQOs and on what the acceptable measurement uncertainty should be.”

NCDAQ's Comment:

The proposed precision and bias measurement uncertainty criteria should emulate those that have been established for other recent National Ambient Air Quality Standards and NCore pollutants.

(FR/Vol. 74, No. 234/Tuesday, December 8, 2009/Proposed Rules 64856) "EPA invites comment on the proposed completeness requirements."

NCDAQ's Comment:

The NCDAQ supports the completeness criteria of 75% to be applied to the daily and quarterly levels.

(FR/Vol. 74, No. 234/Tuesday, December 8, 2009/Proposed Rules 64856) "EPA invites comment on incorporating the proposed substitution test into the final rule."

NCDAQ's Comment:

The NCDAQ supports the proposed data substitution criteria.

(FR/Vol. 74, No. 234/Tuesday, December 8, 2009/Proposed Rules 64858) "EPA invites comment on these proposed changes in the exceptional event flagging and documentation submission deadlines for the revised SO₂ NAAQS."

NCDAQ's Comment:

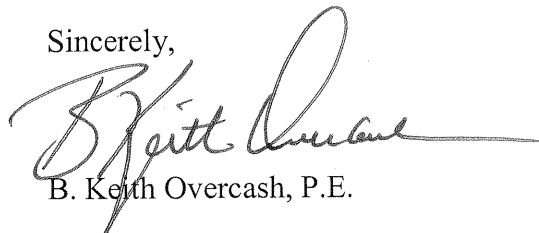
The NCDAQ supports the changes to exceptional events flagging and documentation submission deadlines.

(FR/Vol. 74, No. 234/Tuesday, December 8, 2009/Proposed Rules 6464) "EPA solicits comments on this range for an AQI of 50, and the appropriate basis for selecting an AQI of 50 both within this range and, in light of EPA's solicitation of comment on 1-hour standard levels above 100 ppb, above this range."

NCDAQ's Comment:

We strongly recommend that the EPA establish the Air Quality Index (AQI) breakpoints for SO₂ when they propose the final SO₂ NAAQS rule. We do not want a repeat of the ongoing saga with PM_{2.5} AQI. We recommend that the EPA set 100 AQI to correspond with the short-term SO₂ NAAQS, consistent with the other NAAQS pollutants. The 50 and 150 AQI breakpoints should also be set consistent with the other NAAQS pollutants.

Sincerely,

A handwritten signature in dark ink, appearing to read "B. Keith Overcash", is written over the typed name.

B. Keith Overcash, P.E.

cc: Sheila Holman
Michael Abraczinskas
Laura Boothe
Donnie Redmond
Joette Steger